

THE DYTISCIDAE (COLEOPTERA) OF UTAH:
KEYS, ORIGINAL CITATION, TYPES AND
UTAH DISTRIBUTION

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A review of the voluminous literature dealing with the family Dytiscidae reveals that very little has been published about the Utah dytiscid fauna. The principal studies are the unpublished master's theses of Chandler (1941) and Todd (1952). Chandler (*op. cit.*) prepared the most extensive list which includes 63 species; however, two these *Hydroporus vilis* LeConte and *Hydroporus tristis* Paykull were included on the basis of their known distribution and not on locally collected specimens. Four other species *Hydroporus sinuatipes* Fall, *Hydroporus hardyi* Sharp, *Cybister fimbriolatus* (Say) and *Agabinus sculpturerellus* Zimmerman, have been deleted as mis-identifications. Todd's (*op. cit.*) study was on the adult dytiscids of the Provo River and didn't include any new records. Beck (1954) included 29 dytiscid species in his study of the plateau region and surrounding portions of Wayne, Kane and Garfield Counties. Leech (1938) and Tanner (1928, 1934, 1940) also noted the occurrence of limited numbers of dytiscid species in Utah. Musser (1959) reported on 9 dytiscid genera including 5 specific determinations from the Glen Canyon portion of the Colorado River. Putnam (1876) reported on 12 species collected in Utah county; the specimens were determined by Henry Ulke. Two of these, *Bidessus cinctellus* (LeConte) and *Agabus fimbriatus* (LeConte), have never been collected again from the area and as the original specimens were unavailable for study they have not been included in the present list.

In the present paper an attempt has been made to present workable keys to the genera and species of adult dytiscids of Utah; provide an annotated check list of the species in Utah including original citations, type repository, type locality, and Utah distribution. In the interest of space the distribution is by county except in the case of those species with only a few locality records. There are also at least two undescribed dytiscid species known to occur in Utah. I plan to describe these in the future.

KEY TO THE GENERA OF ADULT UTAH DYTISCIDAE

1. Mesoscutellum covered by hind margin of pronotum; protarsi and mesotarsi 4-segmented or 5-segmented with the 4th usually much shorter than the 3rd (except in *Laccophilus*)
..... 2

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- Mesoscutellum entirely visible; protarsi and mesotarsi 5-segmented with the 4th approximately as long as the 3rd 8
2. Base of prosternum and its postcoxal process in the same plane; protarsi and mesotarsi distinctly 5-segmented; metatarsi with a single straight claw *Laccophilus*
- Base of prosternum and its postcoxal process not in the same plane; protarsi and mesotarsi having 4th segment hidden between lobes of 3rd segment 3
3. Broad apex of metacoxal processes divided into 3 parts, 2 widely separated narrow lateral lobes and a broad depressed middle region, triangular at its tip *Hydrovatus*
- Metacoxal processes not divided into 3 parts as described above; but either without lobes or with these lobes covering base of trochanters 4
4. Metacoxal processes without lateral lobes, bases of metathoracic trochanters entirely free; metatibia slightly arcuate; epipleura without a diagonal carina near base *Bidessus*
- Metacoxal processes with lateral lobes covering at least in part the bases of metathoracic trochanters; metatibia straight; epipleura with or without diagonal carina near base 5
5. A diagonal carina crossing epipleura near base; protarsi and mesotarsi 4-segmented; epipleura of elytra with basal excavation *Hygrotus*
- Without diagonal carina on epipleura; protarsi and mesotarsi 5-segmented, 4th partly hidden; epipleura of elytra without basal excavation 6
6. Mesial line between metacoxal processes never abbreviated; posterior margins of metacoxal processes (best viewed with head of insect toward observer) virtually straight across or sinuate or obtusely angulate *Hydroporus*
- Mesial line between metacoxal processes more or less abbreviated behind; posterior margins of metacoxal processes slightly to deeply incised at middle 7
7. Ventral surface of body subgranulate to densely micro-punctate, lacking scattered large punctures; pronotum without longitudinal sublateral plica; metafemora densely punctate over entire surface *Deronectes*
- Ventral surface of body more or less finely punctate with scattered coarser punctures; pronotum with longitudinal sublateral plica; metafemora with a median line of setiferous punctures, otherwise sparsely punctate *Oreodytes*
8. Eyes emarginate above bases of antennae; first 3 segments of protarsi of male widened but never forming a round plate 9
- Eyes not emarginate above bases of antennae; first 3 segments of protarsi of male greatly widened, forming a nearly round or oval plate with adhesion discs 14

9. Metafemora with a linear group of cilia near the posteriodistal angle 10
Metafemora without such a group of cilia 12
10. Metacoxal processes parallel sided, lateral margins straight to apices *Agabinus*
Metacoxal processes in form of rounded lobes 11
11. Metatarsal claws equal in length; female genital valves simple *Agabus*
Metatarsal claws obviously unequal, outer one of each pair much shorter than inner claw; female genital valves sawlike and laterally compressed *Ilybius*
12. Metatarsal claws virtually equal in length; terminal segment of labial palpi emarginate at apex; smaller species, less than 9 mm. long *Coptotomus*
Metatarsal claws obviously unequal, outer ones shorter than inner; terminal segment of labial palpi simple at apex; larger species, great than 9 mm. long 13
13. Metasternum between mesocoxae deeply, triangularly, split to receive tip of prosternal process; pronotum margined; elytral reticulation lightly impressed, meshes of unequal size and shape *Rhantus*
Metasternum between mesocoxae with a shallow depression, never a sharply outlined, triangular excavation; pronotum not margined; elytral sculpture consisting of numerous parallel transverse grooves *Colymbetes*
14. Inferior spur at apex of metatibiae dilated, much broader than the other spur; first 3 segments of protarsi of male forming a transversely oval adhesion disc, with 3 or 4 transverse rows of petiolate adhesive plates *Cybister*
Inferior spur not or but little broader than the other spur; first 3 segments of protarsi of male forming a nearly round adhesion disc 15
15. Distal margins of first 4 metatarsal segments bare; large beetles, greater than 20 mm. long *Dytiscus*
Distal margins of first 4 metatarsal segments beset with a fringe of flat golden setae; smaller beetles less than 19 mm. long 16
16. Prosternal process sharply pointed; pronotum margined laterally; lateral edge of elytron from behind middle to about apical 5th margined with short spines *Eretes*
Prosternal process rounded; pronotum not margined laterally; elytra without spines on lateral edge 17
17. Outer metatibial spur acute; outer margin of metasternal wing straight *Hydaticus*
Outer metatibial spur blunt, more or less emarginate; outer margin of metasternal wing arcuate 18

18. Ventral and dorsal surface coarsely punctate; elytra usually fluted and hairy in female; protarsal adhesion disc of male with one large basal, and two small median suction cups *Acilius*
- Ventral and dorsal surface almost smooth, with micropunctation; elytra not fluted or hairy in female; protarsal adhesion disc of male with 4 to 6 large and many smaller suction cups 19
19. Elytral ground color yellow, uniformly speckled or vermiculate with black; hind margin of mesofemora with a series of stiff setae which are only about half as long as femora are wide *Graphoderus*
- Elytral ground color black with yellow maculae or transverse bands, or yellow with black spots, or irrorate; hind margin of mesofemora with a series of stiff setae which are as long or longer than the femora are wide (often broken off) *Thermonectus*

SPECIES KEYS, AND ACCOUNTS

Laccophilus Leach 1817

1. Metasternum and metacoxal plates black, abdominal sterna black with posterior margin broadly piceous; elytra nearly uniformly irrorated with brown, vaguely paler laterally *atristernalis* Crotch
- Metasternum, metacoxal plates and abdominal sterna yellow to testaceous; elytra irrorated with brown, but with definite clear yellow spots, the more constant ones located in a sub-basal transverse series, a series in the apical three-fourths, a subapical transverse series, a median lateral and a post-median sutural spot *decipiens* LeConte

Laccophilus decipiens LeConte, 1852. Ann. Lyceum Nat. Hist., N. Y. 5:205.
maculosus Walker, *truncatus* Mannerheim, *californicus* Motschulsky, *fuscus* Sharp.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: In Territorio Oregonensi abundat.

Utah Distribution: Box Elder, Cache, Rich, Weber, Morgan, Davis, Summit, Daggett, Tooele, Salt Lake, Utah, Wasatch, Duchesne, Uintah, Juab, Sanpete, Carbon, Grand, Millard, Beaver, Sevier, Wayne, Garfield, Piute, Emery, Washington, Kane and San Juan Counties.

Laccophilus atristernalis Crotch, 1873, Trans. Amer. Ent. Soc., 4:400.

Type Repository: British Museum (Nat. Hist.), London.

Type Locality: California.

Utah Distribution: Box Elder, Davis, Tooele, Salt Lake, Juab, Utah, Wasatch, Millard, Washington, Kane, and San Juan Counties.

Hydrovotus Motschulsky 1855

Hydrovotus brevipipes Sharp, 1882. Sci. Trans. Royal Dublin Soc., 2(2):324.

Type Repository: British Museum (Nat. Hist.), London.

Type Locality: California.

Utah Distribution: Washington County, St. George (Chandler 1941).

Bidessus Sharp 1882

1. Elytra with distinct sutural striae; elytra dark with pale post-humeral, post-medial and pre-apical color pattern *subtilis* (LeConte)
Elytra without sutural striae or at best very obscure; elytra dark with pale color pattern typically longitudinal or transverse 2
2. Elytra occasionally with obscure sutural striae; elytral markings of large transverse pale areas *amandus* (LeConte)
Elytra lacking sutural striae; elytral markings of longitudinal pale areas *affinis* (Say)

Bidessus affinis (Say), 1823. Trans. Amer. Phil. Soc., 2:24, 104. *nanus* Aubé, *nigrinus* Casey, var. *macularis* LeConte, var. *obscurellus* LeConte, var. *erythrostromus* Mannerheim.

Type Repository: Say's types are considered lost.

Type Locality: Not stated by author.

Utah Distribution: Box Elder, Cache, Rich, Morgan, Salt Lake, Summit, Daggett, Tooele, Utah, Wasatch, Duchesne, Uintah, Juab, Sanpete, Millard, Sevier, Iron, Garfield, Washington, Kane, and San Juan Counties.

Bidessus subtilis (LeConte), 1852, Ann. Lyceum Nat. Hist., N. Y., 5:206.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: "Sta Isabel," California.

Utah Distribution: Emery, Garfield, Washington, and San Juan Counties.

Bidessus amandus (LeConte), 1852, Ann. Lyceum Nat. Hist., N. Y., 5:207.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Gila River, Arizona.

Utah Distribution: Utah (Leech, 1948).

Hygrotus Stephens 1828

1. Clypeus with marginal bead anteriorly 2
Clypeus lacking marginal bead anteriorly 3
2. Under surface black; male protarsal claws laminiform. anterior one a little shorter and less acute; elytra vittate; length 4-5 mm. *masculus* (Crotch)
Under surface rufous or rufo-testaceous; male protarsal claws unmodified; disc of elytra with large, deep punctures. length less than 4 mm. *sayi* Balfour-Browne
3. Last abdominal sternite of the male with a prominent oblique tumidity on either side, often obscure in female *tumidiventris* (Fall)
Last abdominal sternite without tumidity 4

4. Elytral punctation (excluding serial punctures) obviously dual in size; elytra flavo-to rufo-testaceous in color, generally with vitiform markings 5
 Elytral punctation (excluding serial punctures) not dual in size; elytral color highly variable, never vittate, generally with nebuloise markings 6
5. Elytral punctures coarse and intermixed with fine punctures between serial punctures; impressed lines of serial punctures variable in development, ventral surfaces shagreened; anterior protarsal claw simple
 *impressopunctatus* (Schaller)
 Elytral punctures fine, disparity evident but not as distinct as above, impressed lines of serial punctures lacking, ventral surface alutaceous; anterior protarsal claw short and stout
 *unguicularis* (Crotch)
6. Protarsi of male broadly dilated, nearly or quite as wide as the apical width of the tibia *patruelis* (LeConte)
 Protarsi of male at most only slightly dilated 7
7. Color above testaceous with elytral cloud extending nearly to base; elytral markings highly variable sometimes almost absent *medialis* (LeConte)
 Color above testaceous with a faint posterior elytral cloud
 *virgo* (Fall)

Hygrotus sayi Balfour-Browne, 1944. Ann. Mag. Nat. Hist. 11:347-384. *punctatus* Say (nec Marsh).

Type Repository: Type is considered lost.

Type Locality: "Northwest Territory" (Wisconsin and Minnesota).

Utah Distribution: Cache, Weber, Summit, Salt Lake, Utah, Wasatch, Duchesne, Juab, Sanpete, Millard, Sevier, Garfield and Kane Counties.

Hygrotus medialis (LeConte), 1852, Ann. Lyceum Nat. Hist., N. Y., 5:209. *infacetus* (Clark).

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: San Diego.

Utah Distribution: Box Elder, Cache, Rich, Weber, Davis, Summit, Daggett, Salt Lake, Tooele, Utah, Wasatch, Duchesne, Uintah, Juab, Millard, Sevier, Grand, Beaver, Garfield, Kane, and San Juan Counties.

Hygrotus virgo (Fall), 1919, N. Am. Sp. of Coelambus, J. D. Sherman Jr. Publ.: pp. 12 and 13.

Type Repository: American Museum of Natural History.

Type Locality: Virgin River, Utah.

Utah Distribution: Washington, Sevier, and Garfield Counties.

Hygrotus patruelis (LeConte), 1855, Proc. Acad. Nat. Sci. 7:298. *medialis* Sharp, *discoideus* LeConte.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Fort Laramie, "Nebraska" (Wyoming).

Utah Distribution: Cache, Summit, Daggett, Salt Lake, Utah, Wasatch, Duchesne, Uintah, Sanpete, Sevier, Garfield, and San Juan Counties.

- Hygrotus tumidiventris* (Fall), 1919, N. Am. Sp. Coelambus J. D. Sherman Jr. publ.,: 16.
Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
Type Locality: Stony Mountain, Manitoba.
Utah Distribution: Box Elder, Cache, Rich, Davis, Daggett, Salt Lake, Tooele, Utah, Duchesne, Carbon, Sevier, Beaver, Iron, and Garfield Counties.
- Hygrotus masculinus* (Crotch), 1874, Trans. Amer. Ent. Soc., 5:74.
Type Repository: British Museum (Nat. Hist.), London.
Type Locality: "Lake Labache" (Lac La Hache, British Columbia).
Utah Distribution: Box Elder County, Muddy Reservoir, 17 miles west of Rosette and Utah County, Utah Lake.
- Hygrotus unguicularis* (Crotch), 1874, Trans. Amer. Ent. Soc., 5:73, 74.
Type Repository: British Museum (Nat Hist.), London.
Type Locality: British Columbia.
Utah Distribution: Daggett, Sanpete, Sevier, Beaver, Iron, Garfield, and Kane Counties.
- Hygrotus impressopunctatus* (Schaller), 1783, Abhandlungen der Hallischen Naturforschenden Gessellschaft. Dissau u. Leipzig., :312. *picipes* Fabricius, *flavicans* Müller, *lineatus* Müller, *ovalis* Thunberg, *punctatus* Marsham, *porosus* Gebler, *similis* Kirby, *alternatus* Huryl, *decemlineatus* Mannerheim, *pictus* Kirby, *alternans* Kunze, *lineelus* Gyllenhal.
Type Repository: Type is considered lost.
Type Locality: Unkonwn to author.
Utah Distribution: Box Elder, Davis, Salt Lake, Utah, Juab, Duchesne, Uintah, Sevier, Beaver, Piute, Wayne, Iron, and Garfield Counties.

Deronectes Shaper 1882

1. Elytral margin with small subapical tooth; outline of prothorax and elytra strongly discontinuous
..... *elegans* (Panzer)
Elytral margin lacking subapical tooth; outline of prothorax and elytra continuous 2
2. Elytra with more than two distinct longitudinal, discal striae, the first no further from the sutural series than the sutural series is from the suture *striatellus* (LeConte)
Elytra with only two longitudinal discal striae, often indistinct, the first twice as far from the sutural series as the sutural series is from the suture 3
3. Longitudinal elytral striae of impressed punctures distinct; form broader, less than twice as long as wide; body outline discontinuous; pronotal lateral marginal bead increasing in width posteriorly *aequinoctialis* (Clark)
Longitudinal elytral striae of impressed punctures scarcely impressed; form narrower, twice as long as wide, continuous body outline; pronotal lateral marginal bead narrow but constant in width for entire length 4

4. Color pattern of distinct, separate vittae, united only in two discal and three sublateral spots; smaller sized beetles
 *coloradensis* (Fall)

Color pattern of indistinct vittae with considerable transverse coalescence; larger sized beetles *griseostriatus* (DeGreer)

Deronectes elegans (Panzer), 1794. Fn. Germ., 24:5. *brevis* Sturm, *rotundatus* LeConte, *depressus* Stephens.

Type Repository: Type is considered lost.

Type Locality: Unknown to author.

Utah Distribution: Daggett County, Green River, and Salt Lake County. Mountain Dell Reservoir.

Deronectes griseostriatus (DeGreer), 1774. Mémoires pour servir à l'histoire des Insectes. Stockholm, 4:403. *halensis* Paykull, *parallelus* Say, *interruptus* Say, *suffusus* Sharp, *prosternalis* Sharp, var. *catascopium* Say.

Type Repository: Naturhist. Riksmus, Stockholm.

Type Locality: Sweden.

Utah Distribution: Cache, Rich, Summit, Daggett, Utah, Wasatch, Duchesne, Uintah, Millard, Sanpete, Sevier, Washington, Kane, and San Juan Counties.

Deronectes striatellus (LeConte), 1852. Ann. Lyceum Nat. Hist., N. Y., 5:207. *infaustus* Clark, *pulcher* Motschulsky, *corvinus* Needham and Christenson.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: San Francisco et San Diego, California.

Utah Distribution: Box Elder, Cache, Weber, Summit, Daggett, Salt Lake, Utah, Wasatch, Duchesne, Uintah, Juab, Sanpete, Carbon, Sevier, Emery, Grand, Beaver, Garfield, Washington, Kane, and San Juan Counties.

Deronectes aequinoctialis (Clark), 1862, Ann. Mag. Nat. Hist., 3:178. *nudatus* (Say).

Type Repository: British Museum (Nat. Hist.), London.

Type Locality: Mexico.

Utah Distribution: Washington County, St. George.

Deronectes coloradensis (Fall), 1923. Revision N. Am. Sp. *Hydroporus* and *Agaporus*,: 108, 109.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: "Copeland, Res." Boulder County, Colorado.

Utah Distribution: Cache, Summit, Duchesne Counties.

Hydroporus Clariville 1806

1. Posterior line of metacoxal processes sinuate to slightly angulate medially; meta-trochanters elongate, posterior margins more nearly in line with the posterior margin of the metafemora and approximately $\frac{1}{2}$ the length of the metafemora; metacoxal processes glabrous 2
- Posterior line of metacoxal processes truncate or very nearly so; meta-trochanters not elongate, posterior margins not in line with the posterior margin of the metafemora and only about $\frac{1}{4}$ the length of the metafemora; metacoxal processes with pubescence 3

2. Form subovate, width greater than twice the length, moderately convex; pronotum piceous to black; elytra yellowish-brown to reddish-brown *vilis* LeConte
 Form narrower, width less than twice the length, more parallel sided, depressed; pronotum and elytra more nearly yellowish-brown. to reddish-brown *planiusculus* Fall
3. Elytral punctures faint and minute; ovate beetles of larger size (4.5-6 mm. long) 4
 Elytral punctures distinct and moderately coarse; oval beetles of smaller size (3-4.5 mm. long) 7
4. Basal segments of male protarsi very large, wider than following segments *notabilis* LeConte
 Basal segments of male protarsi no wider than the following segments 5
5. Elytral punctures arranged in transversely elongate rows; fourth segment of protarsi of female reduced, third segment deeply bilobed *transpunctatus* Chandler
 Elytral punctures in no distinct order; protarsi of female unmodified 6
6. Abdominal sterna with dense, coarse punctures, most notable on last sternite; male anterior protarsal claws short, arcuate internally and bluntly pointed *axillaris* LeConte
 Abdominal sterna with sparse, finer punctures, no notable difference on last sternite; male anterior protarsal claws short, sinuate internally and acuminate ? *niger* Say
7. Size moderate (3.5-4.5 mm.) 8
 Size small (less than 3.5 mm.) 10
8. Third segment of male protarsi broadly dilated, slightly wider than first and second segments *tenebrosus* LeConte
 Third segment of male protarsi narrowly dilated, never wider than first and second segments 9
9. Anterior protarsal claws of male shorter than their fellows *pervicinus* Fall
 Protarsal claws of male equal *despectus* Sharp
0. Ventral sclerites alutaceous or shagreened between punctures *occidentalis* Sharp
 Ventral sclerites polished or shining between punctures *fuscipennis* Schaum

Hydroporus occidentalis Sharp, 1882, Sci. Trans. Royal Dublin Soc., (2) 2:456.
 Type Repository: British Museum (Nat. Hist.), London.
 Type Locality: "Lake Labache" (Lac La Hache, British Columbia).
 Utah Distribution: Box Elder, Cache, Utah, Duchesne, Summit, and Uintah Counties.

Hydroporus vilis LeConte, 1852, Ann. Lyceum, Nat. Hist., N. Y., 5:208.
 Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: San Jose et San Diego.

Utah Distribution: Duchesne, Uintah, Washington, and San Juan Counties.

Hydroporus planiusculus Fall, 1923, Revision H. Am. Sp. *Hydroporus* and *Agaporus*: 58.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Mt. Adams, White Mountains, New Hampshire.

Utah Distribution: Duchesne and Garfield Counties.

Hydroporus tenebrosus LeConte, 1850, Agassiz Lake Superior, 4:215. *rusticus* Sharp, *luridipennis* LeConte

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Lake Superior.

Utah Distribution: Sevier County, 1 mi. N. of Fish Lake and 18 mi. above Salina Reservoir.

Hydroporus despectus Sharp, 1882, Sci. Trans. Royal Dublin Soc., (2)2:466-467.

Type Repository: British Museum (Nat. Hist.), London.

Type Locality: Canada.

Utah Distribution: Utah County, Provo and Goshen.

Hydroporus fuscipennis Schaum, 1868, Ins. Deutsch., 2:64. *puberulus* Mannerheim.

Type Repository: Zoological Museum of the Bavarian State, Munich, Germany.

Type Locality: Unknown to author.

Utah Distribution: Duchesne County, Farmers Lake Group.

Hydroporus azillaris LeConte, 1853, Cat. of the Desc. Col. of the U. S. by F. E. Melsheimer, revised by Haldeman and LeConte, :32. *humeralis* LeConte.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Colorado River.

Utah Distribution: Washington County, St. George.

Hydroporus niger Say, 1823, Trans. Amer. Phil. Soc., 2:103. *modestus* Aubé, *punctatissimus* Aubé, *latifrons* Sharp.

Type Repository: Type is considered lost.

Type Locality: Not stated in original description.

Utah Distribution: Cache County, Canteen Springs, Logan Canyon.

Hydroporus notabilis LeConte, 1850, Agassiz Lake Superior, 4:216.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Black Bay, Lake Superior.

Utah Distribution: Box Elder, Salt Lake, and Utah Counties.

Hydroporus pervicinus Fall, 1923, Revision N. Am. Sp. *Hydroporus* and *Agaporus*: 84.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Lake Tahoe, California.

Utah Distribution: Summit, Utah, Duchesne, Uintah, and Sanpete Counties.

Hydroporus transpunctatus Chandler, 1941, Great Basin Nat., 2:103.

Type Repository: Brigham Young University, Provo, Utah.

Type Locality: Salamander Lake (pond), Mt. Timpanogos, Utah County, Utah.

Utah Distribution: Cache and Utah Counties.

Oreodytes Seidlitz 1886

1. Epipleura not impressed at humeral angles for reception of mesofemora; metafemora strongly curved at attachment to trochanters; elytra of female with an angular tooth laterally near the apex; elytra lackly impressed longitudinal series of discal punctures; larger (over 4 mm. long)
..... *semiclarus* (Fall)
- Epipleura impressed at humeral angles for reception of mesofemora; metafemora not strongly curved at attachment to trochanters; elytra of female lacking angular tooth laterally near apex; elytra with impressed longitudinal series of discal punctures; smaller (less than 4 mm. long) 2
2. Body outline discontinuous, form elongate oval 3
Body outline continuous, form broadly oval 4
3. Epipleura black or slightly paler along lateral margin; scattered punctures of elytra evident; discal series of punctures moderately impressed *scitulus* (LeConte)
Epipleura pale or slightly darker along lateral margin; scattered punctures of elytra indistinct; discal series of punctures distinctly impressed *septentrionalis* (Gyllenhal)
4. Metacoxal plates with scattered large punctures; scattered elytral punctures distinct *crassulus* (Fall)
Metacoxal plates with scattered small punctures, scattered elytral punctures reduced or lacking 5
5. Elytra with faint, occasional punctures between discal and subhumeral longitudinally impressed series; elytra nigrolineate *obesus* (LeConte)
Elytra impunctate between discal and sub-humeral longitudinally impressed series; elytra indistinctly nigrolineate, considerable coalescence forming a transverse cloud
..... *congruus* (LeConte)

Oreodytes obesus (LeConte), 1866, Proc. Acad. Nat. Sci., Philadelphia, 5:365.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: California.

Utah Distribution: Cache County, Logan.

Oreodytes congruus (LeConte), 1878, Bul. U. S. Geol. Surv., 4:452.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Florissant, Colorado, (8,000 ft.).

Utah Distribution: Box Elder, Summit, Daggett, and Wasatch Counties.

Oreodytes scitulus (LeConte), 1855, Proc. Acad. Nat. Sci., Philadelphia, 7:295.
septentrionis auct (*nec* Gyll.).

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Eagle Harbor, Lake Superior.

Utah Distribution: Weber County, Uintah on the Weber River.

Oreodytes semiclarius (Fall), 1923. Revision N. Am. Sp. *Hydroporus* and *Agaporus*; :113, 114.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Georgetown, Colorado.

Utah Distribution: Cache County, Logan.

Oreodytes crassulus (Fall), 1923, Revision N. Am. Sp. *Hydroporus* and *Agaporus*. :119.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Western Montana.

Utah Distribution: Cache, Weber, Morgan, Daggett, Utah, and Wasatch Counties.

Oreodytes septentrionalis (Gyllenhal), 1827. Insecta Suecica, 4:385.

Type Repository: Zoological Museum, Uppsala, Sweden.

Type Locality: Unknown to author.

Utah Distribution: Duchesne County, Miners Gulch on Rock Creek.

Agabinus Crotch 1873

Agabinus glabrellus (Motschulsky), 1859, Bul. Soc. Imp. Nat. Moscou, 32:184.

Type Repository: Zoological Museum, University of Moscow, Russia.

Type Locality: California.

Utah Distribution: Washington County, St. George, and Zion National Park.

Agabus Leach 1817

1. Antennal segment 7 to 11 of male dilated, segments 8 to 10 broader than long; metasternal wings very narrow, elongate and tongue like *antennatus* Leach
Antennal segments of male not dilated; segments never broader than long; metasternal wings broad or narrow, never elongate or tongue like 2
2. Outline of body clearly discontinuous; pronotum subcordate .. 3
Outline of body not or very slightly discontinuous; posterior margin of pronotum wider than the middle of the pronotum 4
3. Posterior margin of pronotum 6/7 as wide as base of elytra; lateral margin of pronotum slightly sinuate; black; appendages obscurely rufous; 9-10.8 mm. in length *bjorkmanae* Hatch
Posterior margin of pronotum 9/10 as wide as base of elytra; lateral margin of pronotum subparallel before curving out strongly; piceous to rufous; feebly aenescent; 8.7-9.2 mm. in length *cordatus* (LeConte)
4. Elytra testaceous with four black vittae often more or less confluent so that elytra are almost black; meshes of elytral reticulations small, unequal *disintegratus* (Crotch)
Elytra color various, never vittate; meshes of elytral reticulations various 5

5. Spinous punctures along posterior margin of lower surface of metatibiae so closely set as to form an almost continuous groove from base nearly to apex 6
Spinous punctures along posterior margin of lower surface of metatibiae well separated or lacking except in basal $\frac{1}{3}$ 7
6. Male anterior protarsal claw with basal tooth; elytra coarsely reticulate, alveoli large; metafemora strongly obliquely strigate *tristis* Aubé
Male anterior protarsal claw not toothed, slightly sinuate or dilated medially along inner margin; elytra finely reticulate; strongly convex when viewed laterally
..... *minnesotensis* Wallis
7. Prosternal process rather broad, slightly convex, never with a median carina 8
Prosternal process narrower, moderately convex to acutely longitudinally carinate 11
8. Prosternal process broad and flat, sides broadly margined behind the procoxal cavity; protarsi with only small apical area of basal joint clothed with small pallettes, metatibiae without row of spinous punctures *semivittatus* LeConte
Prosternal process broad, slightly convex, never broadly margined behind procoxal cavities, protarsi variable, metatibiae with a row of spinous punctures along posterior lower margin 9
9. Fine punctures of elytra occurring at intersections of the reticulations; pronotal bead very narrow; prosternal process bluntly pointed *hypomelas hypomelas* Mannerheim
Fine punctures of elytra occurring within meshes of reticulations; pronotal bead moderately wide; prosternal process sharply pointed 10
10. Metasternal wings narrow, least distance from mesocoxae to metacoxal plate less than $\frac{1}{2}$ width of the latter; elytral reticulations lightly impressed; elytra unicolor
..... *seriatus intersectus* (Crotch)
Metasternal wings broad, least distance from mesocoxae to metacoxal plate more than $\frac{1}{2}$ the width of the latter; reticulations more deeply impressed; elytra generally with small sublateral yellow spot behind middle
..... *lugens* LeConte
11. Elytral reticulations forming large meshes in both sexes, deeply impressed 12
Elytral reticulations forming small meshes in male; slightly coarser in females of some species 13
12. Head, pronotum and elytra reddish-brown, ventral surface blackish; prosternal process without pubescence; epipleura pale *austini* Sharp

- Head and pronotum black, elytra fuscous often paler at humeral angle; prosternal process finely pubescent; epipleura dark
 *strigulosus* Crotch
13. Anterior protarsal claws of male toothed medially or subapically along inner margin, posterior claw short and curved
 14
- Anterior protarsal claws of male not toothed, posterior claw long and slender, only slightly curved 15
14. Anterior protarsal claws of male subapically toothed, appearing bifid; male pro- and mesotarsi broad, glandular hairs forming pallettes; size over 7 mm. length
 *griseipennis* LeConte
- Anterior protarsal claws of male toothed near apex, not bifid; male pro- and mesotarsi narrowed, glandular hairs not forming pallettes; surface distinctly aeneous; size less than 7 mm. length *punctulatus* Aubé
15. Glandular hairs of male protarsal and mesotarsal pads fine not dilated apically 16
- Glandular hairs of male protarsal and mesotarsal pads, at least of third segment, enlarged into pallettes 17
16. Pronotal bead wide; metacoxal wing narrow, least distance from mesocoxal to metacoxal plate less than $\frac{1}{2}$ the width of the latter; size less than 6.5 mm. long *kenaiensis* Fall
- Pronotal bead narrow, metacoxal wing wide, least distance from mesocoxal to metacoxal plate more than $\frac{1}{2}$ the width of the latter; size larger than 6.5 mm. long
 *verisimilis* Brown
17. Anterior protarsi of male feebly dilated; 3rd segment scarcely wider than 4th *approximatus* Fall
- Anterior protarsi of male rather strongly dilated; 3rd segment wider than 4th 18
18. Prosternal process narrow, lanceolate carina of prosternum continuing into prosternal process but not pronounced
 *obliteratus* LeConte
- Prosternal process broad, acutely carinate 19
19. Meshes of elytral reticulation very small, rounded and subequal; male protarsal claw-bearing segment dentate beneath *ajax* Fall
- Meshes of elytral reticulation larger, irregular and unequal, showing secondary reticulations; male protarsal claw-bearing segment not dentate beneath 20
20. Protarsi and mesotarsi of male with extremely large circular pallettes; anterior angles of pronotum normal; metasternal groove prominent *anthracinus* Mannerheim
- Protarsi and mesotarsi of male with small though distinct pallettes; anterior angles of pronotum turned outward, away

from head; metasternal groove rudimentary
..... *erichsoni* G. & H.

- Agabus cordatus* (LeConte). 1853, Proc. Acad. Nat. Sci., Philadelphia, 6:226.
cordata LeConte.
Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
Type Locality: Santa Fe, New Mexico.
Utah Distribution: Tooele, Salt Lake, Summit, Duchesne, Juab, Utah, Wayne, Grand, Millard, Garfield, Washington, Kane, and San Juan Counties.
- Agabus bjorkmanae* Hatch, 1939, Ent. News, 50:104. *rectus* (LeConte).
Type Repository: University of Washington, Seattle, Washington.
Type Locality: Vancouver Island, British Columbia.
Utah Distribution: Tooele County, Ibapah Pass.
- Agabus semivittatus* LeConte, 1852, Ann. Lyceum Nat. Hist., N. Y., 5:204, *texasus* Sharp.
Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
Type Locality: Colorado desert of California.
Utah Distribution: San Juan, Kane, and Washington Counties.
- Agabus hypomelas hypomelas* Mannerheim, 1834, Bul. Soc. Imp. Nat. Moscou, 16:221. *irregularis* Mannerheim.
Type Repository: Zoological Museum, Helsingfors, Finland.
Type Locality: "Habitat in insula Sitkha D. Eschscholtz" (Alaska).
Utah Distribution: Summit County, Diamond Lake (Chandler 1941).
- Agabus seriatus intersectus* (Crotch) (new combination by Leech, 1942) Canad. Entomol., 74:126-136.
Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
Type Locality: California (lectotype designated by Leech 1942).
Utah Distribution: Box Elder, Cache, Weber, Davis, Summit, Daggett, Salt Lake, Tooele, Utah, Duchesne, Sanpete, Millard, Grand, Beaver, Garfield, Washington, and Kane Counties.
- Agabus lugens* LeConte, 1852, Ann. Lyc. Nat. Hist., N. Y., 5:203, 204. *perplexus* Sharp, *suturalis* Crotch.
Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
Type Locality: San Diego, California. (Colorado desert of California also listed).
Utah Distribution: Summit, Salt Lake, Grand, Wayne, Garfield, Washington, Kane, and San Juan Counties.
- Agabus punctulatus* Aubé, 1838, Sp. gen. des Hydroc., 6:332. *aeneolus* Crotch. Belgium.
Type Repository: Institut des Sciences Naturelles, Brussels, Belgium.
Type Locality: "L'Amerique du Nord."
Utah Distribution: Daggett and Cache Counties (Chandler 1941).
- Agabus disintegratus* (Crotch), 1873, Trans. Amer. Ent. Soc., 4:416.
Type Repository: Original series in British Museum (Nat. Hist.), London.
Type Locality: Not designated by author, original distribution given as Kansas, Arizona, Pennsylvania, Nebraska, and Canada.
Utah Distribution: Weber, Davis, Salt Lake, Utah, Sanpete, Millard, Garfield, Grand, Washington, and Kane Counties.

- Agabus austini* Sharp, 1882, Sci. Trans. Royal Dublin Soc., (2)2:516.
 Type Repository: British Museum (Nat. Hist.), London.
 Type Locality: British Columbia.
 Utah Distribution: Weber, Summit, Salt Lake, Utah, Wasatch, Duchesne, and Millard Counties.
- Agabus strigulosus* (Crotch), 1873, Trans. Amer. Ent. Soc., 4:422. *nanus* (LeConte).
 Type Repository: British Museum (Nat. Hist.), London.
 Type Locality: Lake Tahoe, California.
 Utah Distribution: Summit, Wasatch, Duchesne, and Uintah Counties.
- Agabus griseipennis* LeConte, 1859, Smithsonian Contrib. Knowledge, 11:5.
 Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
 Type Locality: Fort Laramie, Wyoming.
 Utah Distribution: Weber, Salt Lake, Daggett, Utah, Sanpete, Grand, Kane, and San Juan Counties.
- Agabus obliterated* LeConte, 1859, Smithsonian Contrib. Knowledge, 11:5.
 Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
 Type Locality: Fort Laramie, Wyoming.
 Utah Distribution: Box Elder, Rich, Weber, Summit, Daggett, Salt Lake, Utah, Duchesne, Sanpete, Sevier, Wayne, Garfield, and Washington Counties.
- Agabus approximatus* Fall, 1922, Review N. Am. Sp. *Agabus*, J. D. Sherman, Jr., Publ., :26.
 Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
 Type Locality: Horsefly Pk. Divide, Placerville Rd., San Miguel County, Colorado.
 Utah Distribution: Salt Lake, Utah, Wasatch, Duchesne, Millard, Sanpete, Sevier, Iron, Washington, and San Juan Counties.
- Agabus ajax* Fall, 1922, Review N. Am. Sp. *Agabus*, J. D. Sherman, Jr., Publ., :30, 31.
 Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.
 Type Locality: Waghorn, Alberta, Canada.
 Utah Distribution: Duchesne County, Farmers Lake Group; Garfield County, Cyclone Lake and Beaver County, Tushar Mts.
- Agabus anthracinus* Mannerheim, 1852, Bul. Soc. Imp. Nat. Moscou, 25(2):30+. *scapularis* Mann.
 Type Repository: Zoological Museum, Helsingfors, Finland.
 Type Locality: Sitka, Alaska.
 Utah Distribution: Reported by Leech - "Utah" (1938).
- Agabus erichsoni* Gemminger and Harold, 1868, Cat. Coleopt., 2:45+. *nigroaeneus* Erickson, 1873, (*nec* Marsham, 1802).
 Type Repository: Zoological Museum of Humboldt University, Berlin, Germany.
 Type Locality: Berlin, Brandenburg, Germany.
 Utah Distribution: Summit County, Trial Lake and Duchesne County, Mirror Lake.
- Agabus tristis* Aubé, 1838, Sp. gen. des Hydroc., 6:356, 357. *dubius* Mannerheim.
 Type Repository: Musée Royal des Sciences Naturelles, Brussels, Belgium.
 Type Locality: "L'Amérique septentrionale" (North America).

Utah Distribution: Cache, Weber, Salt Lake, Summit, Utah, Wasatch, Duchesne, Uintah, Sanpete, Millard, Washington, and San Juan Counties.

Agabus antennatus Leech, 1939, *Canad. Entomol.* 71:217-218. *clavatus* LeConte 1859 (*nec* Latreille 1804).

Type Repository: Loup Fork of the Platte River, Nebraska.

Type Locality: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Utah Distribution: Garfield County (Beck, 1954).

Agabus verisimilis Brown, 1932, *Canad. Entomol.* 64:4, 5.

Type Repository: Canadian National Collection, Ottawa, Canada.

Type Locality: Creston, British Columbia.

Utah Distribution: Salt Lake County, Willow Creek Pond.

Agabus minnesotensis Wallis, 1933, *Canad. Entomol.*, 65:268.

Type Repository: University of Minnesota.

Type Locality: Minnesota, Hennepin County (apparently an erroneous locality label).

Utah Distribution: Washington County (Tanner 1939).

Agabus kenaiensis Fall, 1926, *Pan-Pacific Ent.*, 2:141, 142.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Anchorage, Alaska.

Utah Distribution: Summit County (Chandler 1941).

Ilybius Erichson 1832

1. Metatarsi of male not margined externally above; large setiferous punctures on ventral surface of metatibiae confined to anterior and posterior margin, sometimes with a few at base *fraterculus* (LeConte)

Metatarsi of male margined externally above; metatibiae with strong setiferous punctures over most of their under surface 2

2. Last Sternite of male with an acute median carina, strigate laterally; metasternal wings narrow, mesocoxae and metacoxal plates separated by more than $\frac{1}{3}$ the width of the latter, measured along the same line; secondary elytral reticulation present *angustior* (Gyllenhal)

Last sternite of male lacking carina; strigate at sides in both sexes; metasternal wings broad; mesocoxae and metacoxal plates separated by about $\frac{1}{3}$ the width of the latter, measured along the same line; secondary elytral reticulations lacking *subaeneus* Erichson

Ilybius subaeneus Erichson, 1839, *Die Kafer Mark Brandenburg*, 1 (vol. 1):156. *viridiaeneus* Crotch.

Type Repository: Zoological Museum of Humboldt University, Berlin, Germany.

Type Locality: Berlin, Brandenburg, Germany.

Utah Distribution: Daggett, Summit, and Duchesne Counties.

Ilybius angustior (Gyllenhal), 1808, *Ins. Suecica*. 1:500. *picipes* Kirby.

Type Repository: Zoological Museum, Uppsala, Sweden.

Type Locality: Unknown to author.

Utah Distribution: Summit, Duchesne, and Garfield Counties.

Ilybius fraterculus (LeConte), 1862, Proc. Acad. Nat. Sci. Philadelphia, 14:521.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: North Red River.

Utah Distribution: Cache, Summit, Salt Lake, Utah, Duchesne, Sanpete, Garfield, Washington, and San Juan Counties.

Coptotomus Say 1834

Coptotomus longulus LeConte, 1852, Ann. Lyceum Nat. Hist., 5:205.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Laramie, "Territorio Missouriensi" (Wyoming).

Utah Distribution: Cache County, Logan and Daggett County, Green River.

Rhantus Dejean 1833

1. Pronotal disc with single transverse spot, not bilobed; metacoxal processes pale; prosternum pale; male anterior protarsal claws long, sinuate, dilated; posterior protarsal claws $5/9$ length of anterior claws *frontalis* (Marsham)
 Pronotal disc bimaculate or with single bilobed spot; only posterior tips of metacoxal processes pale, if at all; male anterior protarsal claws long or short, sinuate or straight not dilated, posterior protarsal claws almost as long as anterior claws 2
2. Anterior protarsal claws $1/3$ longer than fellows and longer than claw bearing segment; female with elongate-oval roughened area on each elytron; prosternal process (carina) usually black *anisonychus* Crotch
 Anterior protarsal claws only slightly longer than fellows, not as long as claw bearing segment; female without roughened area on elytron; prosternal process (carina) usually pale 3
3. Elytra solid black except for yellowish-brown irrorate apex, lateral, basal and scutellar margin *mexicanus* (Laporte)
 Elytra yellowish, irrorated with black 4
4. Anterior and posterior protarsal claws of male straight, sinuate along inner margin *binotatus* (Harris)
 Anterior protarsal claws of male evenly, slightly curved, posterior claws arcuate 5
5. Anterior protarsal claws of male not broader at middle than at base; aedeagus with apical quarter thicker, less strongly twisted to one side; elytral reticulations deeply impressed, elongated slightly longitudinally *gutticollis* (Say)

Anterior protarsal claws of male broader at middle than at base, strongly arcuate; aedeagus with apical quarter thinner, more strongly twisted to one side; black dots of elytra vermiform. elytral reticulations lightly impressed
..... *hoppingi* Wallis

Rhantus binotatus (Harris), 1828, New Eng. Farmer, 7:164. *divisus* (Aubé), *longipes* Sharp, *assimilis* Kirby, *maculicollis* (Aubé), *plebejus* Sharp, *flavogriseus* Crotch.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Not stated by author; original distribution given as Mexico, Guatemala, and Western United States.

Utah Distribution: Box Elder, Cache, Rich, Davis, Summit, Dagggett, Tooele, Salt Lake, Utah, Wasatch, Duchesne, Uintah, Juab, Sanpete, Iron, and Washington Counties.

Rhantus gutticollis (Say), 1834, Trans. Amer. Phil. Soc., 4:442,443.

Type Repository: Type is considered lost.

Type Locality: "River beyond Vera Cruz."

Utah Distribution: Emery, Grand, Iron, Garfield, Washington, Kane, and San Juan Counties.

Rhantus mexicanus (Laporte), 1835, Etudes Ent., :101.

Type Repository: Type is considered lost.

Type Locality: Mexico.

Utah Distributions: Emery, Garfield, and Grand Counties.

Rhantus hoppingi (Wallis), 1933, Canad. Entomol., 35:272. *longipes* Hatch.

Type Repository: Canadian National Collection, Ottawa, Canada.

Type Locality: Trinity Valley, B. C.

Utah Distribution: Box Elder, Weber, Summit, Salt Lake, and Utah Counties.

Rhantus anisonychus Crotch, 1873, Trans. Amer. Ent. Soc., 4:409.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Not stated in original description, Leech (1948) remarks that Darlington, of the Museum of Comparative Zoology at Harvard University, feels that Crotch's probable type in the LeConte collection is labeled S. Fr. standing probably for San Francisco.

Utah Distribution: Washington County (Tanner 1934).

Rhantus frontalis (Marshall), 1802, Ent. Brit., 1:425. *notatus* Fabricius, *punctatus* Hoppe, *flavicollis* Eschscholtz, *suturalis* Boisduval and Lacordaire, *Gyllenhallii* Castelnau, *sericans* Sharp.

Type Repository: Type is considered lost.

Type Locality: Unknown to author.

Utah Distribution: Dagggett County; Garfield County, Aquarius Plateau and Sevier County, 1 Mile North of Fish Lake, and 1 Mile North of Jct. Hwy. 24 on Hwy. 25.

Colymbetes Clairville 1806

Colymbetes sculptilis sculptilis (Harris), 1829, New Eng. Farmer, 8:1.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Ipswich, Massachusetts.

Utah Distribution: Rich, Davis, Summit, Dagggett, Salt Lake, Wasatch, Duchesne, Sanpete, and Iron Counties.

Dytiscus Linnaeus 1758

1. Metacoxal processes bluntly pointed apically; adhesive pads on 2nd and 3rd mesotarsal segments of male longitudinally divided by a bare space; elytra of male and female smooth *marginicollis* LeConte
- Metacoxal processes sharply pointed apically; adhesive pads of 2nd and 3rd mesotarsal segments of male not longitudinally divided; elytra of male smooth and of female smooth or sulcate 2
2. Dorsum of head adjacent to eye yellow along inner margin; size larger, over 30 mm. long *dauricus* Gebler
- Dorsum of head adjacent to eye not at all yellow, or very faintly yellow, size smaller, under 30 mm. long *ooligbukii* Kirby

Dytiscus marginicollis LeConte, 1844. Proc. Boston Soc. Nat. Hist., 1:201.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: "In Flumine Missouri" (Missouri River).

Utah Distribution: Cache, Salt Lake, Summit, Daggett, Utah, and Sanpete Counties.

Dytiscus dauricus Gebler, 1832. Nouv. Mem. Soc. Imp. Nat. Moscou. 2:39.

confluens Say, *diffinis* LeConte.

Type Repository: Unknown to the author.

Type Locality: Unknown to the author.

Utah Distribution: Summit, Salt Lake, Wasatch, Duchesne, Uintah, Sanpete, Sevier, Wayne, and Garfield Counties.

Dytiscus ooligbukii Kirby, 1837. Fn. Boreali Americana, 4:74, 75. *parvulus* Mannerheim, *alaskanus* Balfour-Browne.

Type Repository: British Museum (Nat. Hist.), London.

Type Locality: Great Bear Lake River.

Utah Distribution: Summit County, Lilly Lake and Duchesne County, Rock Sea Pass.

Hydaticus Leach 1817

Hydaticus modestus Sharp, 1882. Sci. Trans. Royal Dublin Soc., (2)2:650.

americanus Sharp

Type Repository: British Museum (Nat. Hist.), London.

Type Locality: Not mentioned by author, but distribution given as North America.

Utah Distribution: Salt Lake and Juab Counties.

Acilius Leach 1817

Acilius semisulcatus abbreviatus Mannerheim, 1843. Bul. Soc. Imp. Nat. Moscou, 16:219. (New combination Hatch 1953).

Type Repository: Musée Royal des Sciences Naturelles, Brussels, Belgium.

Type Locality: "Habitat in insula Sitkha" (Alaska).

Utah Distribution: Box Elder, Weber, Summit, Salt Lake, Utah, Wasatch, Duchesne, Sanpete, Beaver, and San Juan Counties.

Thermonectus Dejean 1833

1. Elytra black, conspicuously marked with numerous yellow spots, considerable coalescence may be observed with the pale lateral margins *marmoratus* (Hope)

Elytra black, lateral margins with variable yellow vitta, may be interrupted *basillaris* (Harris)

Thermonectus basillaris (Harris), 1829, New England Farmer, 8:1. *incisus* Aubé, *..cinctatus* Aubé, *laticinctus* LeConte, *nimbatus* Melsheimer.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: Not given by original author.

Utah Distribution: Salt Lake, Weber, Tooele, Utah, and Juab Counties.

Thermonectus marmoratus (Hope), 1832, in: Cuvier, Animal Kingdom, 1:284, and pl. 32, fig. 1. *flavomaculatus* Chevrolat, *maculatus* LeConte.

Type Repository: Paris Museum (Nat. Hist.)

Type Locality: Mexico.

Utah Distribution: Grand, Garfield, Kane, and San Juan Counties.

Graphoderus Dejean 1833

1. Pronotum with transverse anterior and posterior fascia attaining margins; male protarsi dilated, clothed beneath with 14 or 15 pallettes; male mesotarsi not dilated and without pallettes *occidentalis* Horn

Pronotum with transverse anterior and posterior fascia not attaining margins; male protarsi dilated, clothed beneath with three large and numerous smaller pallettes; male mesotarsi with pallettes *perplexus* Sharp

Graphoderus perplexus Sharp, 1882, Sci. Trans. Royal Dublin Soc., (2)2:695. *elatus* Sharp. *zonatus* auct. Walker (*nec* Hoppe).

Type Repository: British Museum (Nat. Hist.), London.

Type Locality: United States.

Utah Distribution: Wasatch County, 3 mi. East of Guardsman's Pass; Garfield County, Aquarius Plateau.

Graphoderus occidentalis Horn, 1883, Trans. Amer. Ent. Soc., 10:281.

Type Repository: Academy of Sciences, Philadelphia, Pennsylvania.

Type Locality: No type was designated, but California and Washington territory were listed as the distribution in the original description.

Utah Distribution: Salt Lake, Duchesne, and Grand Counties.

Eretes Laporte 1833

Eretes sticticus (Linnaeus), 1767, Systema Nat., ed. 12:666. *conicollis* Wollaston, *occidentalis* Erichson, *punctatus* Zoubkoff, *subcoriaceus* Wollaston, *subdiaphanus* Wollaston, *picipennis* Motschulsky.

Type Repository: British Museum (Nat. Hist.), London.

Type Locality: "Barbarie."

Utah Distribution: Box Elder County, Muddy Reservoir, 17 mi. West of Rosette; Washington County, St. George.

Cybister Curtis 1827

Cybister explanatus LeConte, 1852, Ann. Lyceum Nat. Hist., N. Y., 5:202.

Type Repository: Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts.

Type Locality: "Ad San Diego," Colorado, et Sacramento minus frequens, given as original distribution.

Utah Distribution: Salt Lake, Tooele, Utah, and Washington Counties.

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